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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/893,825	FAIBISH ET AL.	
	Examiner	Art Unit	
	Chris Parry	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-9,11-14,16-23 and 25-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-9,11-14,16-23 and 25-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed February 2, 2006 have been fully considered but they are not persuasive.

In response to applicant's argument (Page 17, 1st ¶, lines 1-4) that Armstrong does not disclose, suggest, or teach wherein the movies are ranked with respect to popularity, the examiner respectfully disagrees. Applicant cites the definition of rank to be to arrange in a series in ascending or descending order of importance. Claim 2 requires "the movies are ranked with respect to popularity", the examiner has given the term "ranked" its broadest interpretation. Webster's New World Dictionary defines the word "ranked" as to give a relative position, usually in a scale classifying things; grade; degree. Armstrong teaches primary storage partition 218 on the primary storage device 216 at each head-end 210 is used to store frequently requested video assets or "movies" (Page 10, lines 1-2). Further, secondary storage partition is used to store portions of infrequently requested video assets or "movies" (Page 10, lines 6-7). Armstrong discloses frequently requested or "popular" movies take precedence over less requested or "unpopular" movies by storing the frequently requested movies in full on primary storage partition 218 and infrequently requested movies are divided amongst the plurality of head-ends 210 (Page 10, lines 1-16). Therefore, the frequently requested video assets are given a higher grade and are give a more prominent position over

infrequently requested video assets so the Armstrong teaches the movies are ranked with respect to popularity as required by claim 2.

In response to applicant's argument (Page 17, 2nd ¶, lines 1-6) that Armstrong does not disclose, suggest, or teach wherein the data movers in the respective sets of data movers are configured differently for providing more network interface resources for very popular movies and for providing more local cache memory resources for less popular movies, the examiner respectfully disagrees. Applicants cite that FIG. 4 of the disclosure shows the data movers each having different configurations of cache RAM cards and network interface cards, the examiner reviewed FIG. 4 of the disclosure (dated 01/19/2002) and each data mover appears to have the same configuration. Furthermore, Armstrong teaches when a subscriber requests to view a frequently requested video asset or "popular movie" that is stored on primary storage partition 218 or "network interface resources", the movie is immediately delivered to the requesting subscriber, thereby fulfilling the request (Page 10, lines 20-26). On the other hand, if a subscriber requests to view an infrequently requested video asset or "less popular movie" which is not stored on primary storage partition 218, then resources for the less popular movie must be retrieved from other headends with the system (Page 10, line 27 – Page 11, line 11). Thus, Armstrong teaches wherein the data movers (210_2–210_n – figure 2) in the respective sets of data movers are configured differently for providing more network interface resources (218 – figure 2) for very popular movies and for

providing more local cache memory resources (219 – figure 2) for less popular movies (Page 10, lines 1-16).

In response to applicant's argument (Page 20, 2nd ¶, lines 1-6) stating that Mizutani does not disclose, suggest, or teach a respective set of the data movers are pre-assigned for servicing video streams for each movie ranking, the examiner respectfully disagrees. As stated earlier, the term "ranking" must be given its broadest, most reasonable interpretation, in this case Webster's New World Dictionary defines "ranking" to mean to give a relative position, usually in a scale classifying things; grade; degree. Mizutani teaches the predicted number B(i,t) is periodically checked for all the contents, and the contents are dynamically allocated by being copied, moved, and deleted so that B(i,t)=0 as much as possible (Col. 6, lines 51-54). Mizutani teaches, using the equation for B(i,t), it can be determined which movie will be the most popular or needs the most resources, and subsequently the movies that require more resources, receive a higher grade and better position or "ranking" over other movies that do not require the same amount of resources. Further, although figure 16 is shown as prior art, it is referenced for the purpose to visually show the fact that a respective server or "data mover" are assigned to service one very popular movie and another server or "data mover" may be used to service a plurality of less popular movies that do not require as many resources and have a lower grade and a lower position or "ranking". Mizutani's improvement of figure 16 is merely just the ability to copy contents

from one server to the next so as to allow dynamic moving of resources between servers.

In response to applicant's argument (Page 21, 1st ¶, lines 8-9) that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Armstrong is combined with Mizutani in order for Mizutani to teach the advantage of assigning a server or headend to service a pre-assigned movie stream to facilitate a video server system which has contents dynamically allocated for efficient services (Mizutani - Col. 3, lines 48-50).

In response to applicant's arguments (Page 22, 4th ¶, lines 1-5) stating applicant's disagree with the contention that it is notoriously well known in the art to transfer movie data to servers serving a next higher/lower movie ranking, the examiner respectfully disagrees. As mentioned before, the term "ranking" must be given its broadest, most reasonable interpretation, in this case Webster's New World Dictionary defines "ranking" to mean to give a relative position, usually in a scale classifying things; grade; degree. Furthermore, Mizutani teaches movies that require more resources,

have a higher grade or "ranking" over other movies that do not require the same amount of resources. Mizutani also teaches movies can be dynamically moved between servers, or movies can be completely deleted, which makes more resources available for more popular movies. Mizutani teaches video server SV0 is used to store content C0 and C1 (Col. 7, line 64 – Col. 8, line 42). When requests go up for C0, C0 now has a higher grade or "ranking" over C1, so C1 is moved to a lower ranking video server S1 as shown in figure 7.

2. The examiner notes the features of the Official Notice are taken to be admitted prior art because the applicant failed to traverse the examiner's assertion of official notice for Claims 9 and 23.

Claim Objections

3. Claims 27-30 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claims 27-30 fail to further limit parent claims 2, 12, 16, and 26 respectfully, as claims 27-30 require the respective sets of data movers to be configured differently by having fewer cache memory resources and more network interface resources in the data movers that service more popular movies than in the data movers that service less popular movies as recited and claims 2, 12, 16, and 26 respectfully require configuring

data movers in the respective sets of data movers differently for providing more network interface resources for very popular movies and for providing more local cache memory resources for less popular movies as recited on page 11, lines 1-4 of the claim. There is no clear difference between applicant's recited "providing more network interface resources for very popular movies" and "more network interface resources in the data movers that service more popular movies", therefore claims 27-30 fail to further limit claims 2, 12, 16, and 26 respectfully.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2-9, 11-14, 16-23, and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong et al. "Armstrong" (WO 2000/60861) in view of Mizutani (U.S. 6,115,740).

Regarding Claims 2 and 27, Armstrong discloses in figure 1 a video-on-demand system that provides clients with access to movies on demand. Armstrong teaches, "a cached disk storage system including a primary cache and disk storage for storing the movies" by disclosing remote head-end 210R or "cached disk storage system" in figure

2, which comprises primary storage partition 218 or "primary cache" and secondary storage partition 219 or "disk storage" for storing movies.

Armstrong teaches "a multiplicity of data mover computers coupled to the cached disk storage system for streaming video data from the cached disk storage system to clients in a data network, each of the data mover computers having a local cache" by disclosing headend 210_2-210_n that comprise primary storage 216_2-216_n or "local cache".

Armstrong teaches, "wherein the movies are ranked with respect to popularity..." by disclosing primary storage partition 218 is used to store frequently requested video assets and secondary storage partition 219 is used to store infrequently requested video assets (page 10, lines 1-10).

Armstrong teaches "wherein the data movers in the respective sets of data movers are configured differently for providing more network interface resources for very popular movies and for providing more local cache memory resources for less popular movies" by disclosing headend 210_2-210_n comprise primary storage partition 218 is used to store frequently requested video assets and secondary storage partition 219 is used to store infrequently requested video assets. However, Armstrong fails to disclose a respective set of data movers are pre-assigned for servicing video streams for each movie ranking.

In an analogous art, Mizutani teaches using the predicted number of times that the content i is simultaneously accessed at the time t is represented by Pi(t) and the equation for B(i,t) is used to determine if content is lacking resources to determine how

many streams on each server are necessary to facilitate requests (Col. 6, lines 32-38). Figure 7 further discloses pre-assigning content, C0 and C1, to servers SV0 and SV1 or "data movers". Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Armstrong with the teachings of Mizutani in order to pre-assign data movers to service video streams for the benefit of making more resources available for more popular content.

As for Claim 3, Armstrong and Mizutani disclose, in particular Armstrong teaches "wherein for very popular movies, the very popular movies are retained in their entirety in local cache of the data movers assigned to service the very popular movies" by disclosing headend 210_n comprising primary storage partition 218 used to store frequently requested video (page 10).

As for Claim 4, Armstrong fails to disclose the sets of data movers include a set consisting of more than one data mover for servicing one very popular movie, a set consisting of one data mover for servicing only one movie, and a set consisting of one data mover for servicing a plurality of the movies.

In an analogous art, Mizutani discloses in figure 16, which is admitted to be prior art by Mizutani, show static video servers 110-112 servicing C0, video servers 111 and 112 provide service for C1, while video servers 114 and 115 service C2. Video server 115 services the remaining content, C2, C3, C4, and C5. Although the teachings of

Mizutani are prior art, his improvement over the admitted prior art is the ability to copy and move content to other servers or "data movers" to provide more network resources. Accordingly, the teachings of figure 16, multiple servers or "data movers" used to service popular movies and a single server or "data mover" to service several unpopular movies can still be incorporated into Mizutani's preferred embodiment. Mizutani fails to explicitly show only one movie being service by only one video server. The applicants own admission provides evidence that it is notoriously well known in the art of video server systems, to use a single video server to service only one content stream. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Armstrong with the teachings of Mizutani by implementing a method whereas only one movie would be assigned to a data mover set consisting of only one data mover for the benefit of providing a dedicated source for popular movies.

As for Claim 5, Armstrong and Mizutani disclose, in particular Armstrong teaches "a series of at least some of the data movers include direct links for transfer of movie data from a data mover set servicing one movie ranking to a data mover set servicing a next...movie ranking and for transfer of movie data from the data mover set servicing the one movie ranking to a data mover set servicing a next...movie ranking" by disclosing in figure 2, the process of where infrequently requested video content is deemed desirable to have stored at other head-ends 210, the infrequently requested video asset is retrieved from the remote head-end 210R and is transmitted by the

remote video stream server 214R across inter-server network 260, to the local head-ends 210.

Armstrong fails to explicitly disclose transferring the movie data to a data mover servicing a next higher/lower movie ranking. The applicants own admission provides evidence that it is notoriously well known in the art to transfer movie data to servers servicing a next higher/lower movie ranking. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Armstrong in order to transfer movie data from one data mover to the next data mover servicing a higher/lower ranking movie for the benefit of having servers with more or less resources service movies that need more or less resources depending on popularity.

As for Claim 6, Armstrong fails to disclose data mover resources for a certain number of video streams from the data movers to the clients are reserved for each of a multiplicity of the movies.

In an analogous art, Mizutani teaches in figure 16, a higher number of streams are reserved for more popular content, like C0, and the streams are divided among a plurality of video servers as shown. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Armstrong in view of Mizutani in order to reserve video streams on each data mover for popular content for the benefit of making available more streams for popular content and less streams for unpopular content.

As for Claim 7, Armstrong and Mizutani disclose, in particular Armstrong teaches "wherein the video file server is programmed for locking in the primary cache a plurality of entire movies, and when there is a need for servicing a more popular movie from the primary cache and there is insufficient free cache memory for servicing the more popular movie from the primary cache, transferring the servicing of a less popular movie from the primary cache to disk storage in order to free cache memory for servicing the more popular movie from the primary cache" by disclosing primary storage partition 218 on headend 210_n is used to store frequently requested video (page 10, lines 1-2). Armstrong discloses moving videos from secondary storage partition 219 to primary storage partition 218 if the video exceeds a threshold value of requests from users (page 12, lines 3-14). Armstrong teaches when an unpopular movie becomes popular the movie is copied from secondary storage partition 219 and moved to primary storage partition 218. Further, Armstrong discloses when the video then drops below the threshold the video is then copied back to secondary storage partition 219 and deleted from primary storage partition 218 (page 12, line 23 to page 13, line 2).

As for Claim 8, Armstrong and Mizutani disclose, in particular Armstrong teaches "wherein the video file server is programmed for freeing primary cache memory by transferring the servicing of a least popular movie in the primary cache from the primary cache to the disk storage so long as no more than a certain number of video streams are being serviced concurrently from the least popular movie in the primary cache" by

disclosing if a frequently requested video stored at the primary storage partition or "primary cache" becomes infrequently requested over a period of time, the video is transferred to secondary storage partition 219 or "disk storage" and the video asset is deleted from the primary storage partition 218 to prevent duplicate storage (page 12, line 23 to page 13, line 2).

As for Claim 9, Armstrong fails to disclose wherein the video file server is programmed for negotiating with a client for selection of an available movie during peak demand when resources are not available to select freely any movie in the disk storage for which a video stream can be started.

In an analogous art, Mizutani discloses in figure 7, dynamic allocating means 22 receiving a request from a client. As shown, delivering video server determining means 22a receives the initial request and if the requested content C0 cannot be delivered to the client, a contents delivery rejecting means 22g indicates a rejection of the delivery of the content C0 to the client. The negotiation occurs by the client makes a request content and the server and client come to a conclusion when the server delivers the requested video or when the server notifies the client that the requested content is not available. Mizutani fails to specify whether this negotiation between the video server and client takes place during peak demand. The examiner gives Official Notice that it is notoriously well known in the art of video on demand, for negotiation of video content to occur during peak demand. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Armstrong with the

teachings of Mizutani to specify a system where negotiation takes place with a client during the peak demand hours for the benefit of providing communication to the client when resources are currently unavailable in the video server for the client.

Regarding Claims 12 and 28, Armstrong discloses in figure 1 a video-on-demand system that provides clients with access to movies on demand. Armstrong teaches, "a cached disk storage system including a primary cache and disk storage for storing the movies" by disclosing remote head-end 210R or "cached disk storage system" in figure 2, which comprises primary storage partition 218 or "primary cache" and secondary storage partition 219 or "disk storage" for storing movies.

Armstrong teaches "a multiplicity of data mover computers coupled to the cached disk storage system for streaming video data from the cached disk storage system to clients in a data network, each of the data mover computers having a local cache" by disclosing headend 210_2-210_n that comprise primary storage 216_2-216_n or "local cache".

Armstrong teaches "wherein the video file server is programmed for locking in the cache a plurality of entire movies, and when there is a need for servicing a more popular movie from the primary cache and there is insufficient free cache memory for servicing the more popular movie from the cache, transferring the servicing of a less popular movie from the cache to disk storage in order to free cache memory for servicing the more popular movie from the cache" by disclosing primary storage partition 218 on headend 210_n is used to store frequently requested video (page 10, lines 1-2). Armstrong discloses moving videos from secondary storage partition 219 to

primary storage partition 218 if the video exceeds a threshold value of requests from users (page 12, lines 3-14). Armstrong teaches when an unpopular movie becomes popular the movie is copied from secondary storage partition 219 and moved to primary storage partition 218. Further, Armstrong discloses when the video then drops below the threshold the video is then copied back to secondary storage partition 219 and deleted from primary storage partition 218 (page 12, line 23 to page 13, line 2).

Armstrong teaches "wherein each of the data mover computers has a local cache, the movies are ranked with respect to popularity...and the data movers in the respective sets of data movers are configured differently for providing more network interface resources for very popular movies and for providing more local cache memory resources for less popular movies" by disclosing head-ends 210_2-210_n comprise primary storage 216. The head-ends or "data movers" are configured to provide more network interface resources for very popular movies by the use of primary storage 216, which comprises primary storage partition 218. Primary storage partition 218 is used to store frequently requested movies or "popular movies". Less popular movies are stored on secondary storage partition 219 or "local cache".

Armstrong fails to disclose a respective set of data movers are pre-assigned for servicing video streams for each movie ranking. In an analogous art, Mizutani teaches in figure 7 storing movies, represented by C0 and C1, to pre-assigned data storing means or "data movers". Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Armstrong with the teachings of

Mizutani in order to pre-assign data movers to service video streams for the benefit of making more resources available for more popular content.

Considering Claim 11, the claimed elements of wherein the video file server is programmed for freeing locked cache memory by transferring the servicing of the least popular movie in the cache from the cache to the disk storage so long as no more than a certain number of video streams are being concurrently serviced from the least popular movie in the cache, corresponds with subject matter mentioned above in the rejection of claim 8, and is likewise treated.

Considering Claim 13, the claimed elements of wherein a series of at least some of the data movers include direct dedicated links for transfer of movie data from a data mover set servicing one movie ranking to a data mover set servicing a next higher movie ranking and for transfer of movie data from the data mover set servicing the one movie ranking to the data mover set servicing a next lower movie ranking, corresponds with subject matter mentioned above in the rejection of claim 5, and is likewise treated.

As for Claim 14, Armstrong fails to disclose data mover resources for a certain number of video streams from the data movers to the clients are reserved for each of a multiplicity of the movies.

In an analogous art, Mizutani teaches in figure 16, that a higher number of streams are reserved for more popular content (C0) and the streams are divided among

a plurality of video servers as shown. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Armstrong with the teachings of Mizutani in order to reserve resources for a certain number of video streams on each data mover for the benefit of providing as many resources as possible for popular content and limiting the amount of streams available for unpopular content.

Regarding Claims 16 and 29, Armstrong teaches a method of providing video on demand by disclosing the use of a plurality of head-ends 210 or "data movers" comprising of primary storage 216 or "cached disk storage system". Armstrong further teaches the use of a remote head-end 210R comprising primary storage partition 218 and secondary storage partition 219.

Armstrong teaches "ranking the movies with respect to popularity" by disclosing primary storage partition 218 is used to store frequently requested video and secondary storage partition 219 is used to store infrequently requested video.

Armstrong teaches "configuring differently the data movers in the respective sets of data movers in order to provide more network interface resources for very popular movies and for providing more local cache memory resources for less popular movies" by disclosing each head-end 210 or "data mover" comprise primary storage 216 which comprises primary storage partition 218 and secondary storage partition 219. Primary storage partition 218 is used to store frequently requested video and secondary storage partition 219 or "local cache" is used to store infrequently requested video. Armstrong

fails to disclose assigning a respective set of the data movers to each movie ranking, and servicing video streams for each movie ranking with the respective set of data movers assigned for servicing said video streams for said each movie ranking.

In an analogous art, Mizutani teaches in figure 7 storing movies, represented by C0 and C1, to pre-assigned data storing means or "data movers". Further, Mizutani teaches "servicing video streams for each movie ranking with the respective set of data movers assigned for servicing said video streams for said each movie ranking" as disclosed in figure 16, a higher number of streams are reserved for more popular content, like C0, and the streams are divided among a plurality of video servers as shown. Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Armstrong with the teachings of Mizutani in order to pre-assign content to data movers for the benefit of dedicating servers to specific content to better effectively manage resources.

Considering Claim 17, the claimed elements of wherein for very popular movies, retaining the very popular movies in their entirety in the local cache of the data movers assigned to service the very popular movies, corresponds with subject matter mentioned above in the rejection of claim 3, and is likewise treated.

Considering Claim 18, the claimed elements of servicing a most popular movie with an assigned data mover set consisting of more than one data mover, servicing only

one movie with an assigned data mover set consisting of one data mover, and servicing a plurality of movies with an assigned data mover set consisting of one data mover, corresponds with subject matter mentioned above in the rejection of claim 4, and is likewise treated.

Considering Claim 19, the claimed elements of wherein a series of at least some of the data movers are linked by direct dedicated data links and the method includes transferring movie data from a data mover set servicing one movie ranking to a data mover set servicing a next higher movie ranking and transferring movie data from a data mover set servicing the one movie ranking to a data mover set servicing a next lower movie ranking, corresponds with subject matter mentioned above in the rejection of claim 5, and is likewise treated.

Considering Claim 20, the claimed elements of reserving data mover resources for a respective number of video streams from the data movers to the clients for each of a multiplicity of the movies, corresponds with subject matter mentioned above in the rejection of claim 14, and is likewise treated.

Considering Claim 21, the claimed elements of locking in the primary cache a plurality of entire movies, and when there is a need for servicing a more popular movie from the primary cache and there is insufficient free cache memory for servicing the more popular movie from the primary cache, transferring the servicing of a less popular

movie from the primary cache to the disk storage in order to free primary cache memory for servicing the more popular movie from the primary cache, corresponds with subject matter mentioned above in the rejection of claim 7, and is likewise treated.

Considering Claim 22, the claimed elements of freeing primary cache memory by transferring the servicing of a least popular movie in the primary cache from the primary cache to the disk storage so long as no more than a certain number of video streams are being concurrently serviced from the least popular movie in the primary cache, corresponds with subject matter mentioned above in the rejection of claim 8, and is likewise treated.

Considering Claim 23, the claimed elements of the video file server negotiating with a client for selection of an available movie during peak demand when resources are not available to select freely any movie in the disk storage for which a video stream can be started, corresponds with subject matter mentioned above in the rejection of claim 9, and is likewise treated.

Regarding Claims 26 and 30, Armstrong teaches a method of providing video on demand by disclosing the use of a plurality of head-ends 210 or "data movers" comprising of primary storage 216 or "cached disk storage system". Armstrong further teaches the use of a remote head-end 210R comprising primary storage partition 218 and secondary storage partition 219.

Armstrong teaches "locking in the cache a plurality of entire movies, and when there is a need for servicing a more popular movie from the cache and there is insufficient free cache memory for servicing the more popular movie from the cache, transferring the servicing of a less popular movie from the cache to the disk storage in order to free cache memory for servicing the more popular movie from the cache" by disclosing primary storage partition 218 on headend 210_n is used to store frequently requested video (page 10, lines 1-2). Armstrong discloses moving videos from secondary storage partition 219 to primary storage partition 218 if the video exceeds a threshold value of requests from users (page 12, lines 3-14). Armstrong teaches when an unpopular movie becomes popular the movie is copied from secondary storage partition 219 and moved to primary storage partition 218. Further, Armstrong discloses when the video then drops below the threshold the video is then copied back to secondary storage partition 219 and deleted from primary storage partition 218 (page 12, line 23 to page 13, line 2).

Armstrong teaches "wherein each of the data mover computers has a local cache, the movies are ranked with respect to popularity...and the data movers in the respective sets of data movers are configured differently for providing more network interface resources for very popular movies and for providing more local cache memory resources for less popular movies" by disclosing head-ends 210_2-210_n comprise primary storage 216. The head-ends or "data movers" are configured to provide more network interface resources for very popular movies by the use of primary storage 216, which comprises primary storage partition 218. Primary storage partition 218 is used to store

frequently requested movies or "popular movies". Less popular movies are stored on secondary storage partition 219 or "local cache".

Armstrong fails to disclose a respective set of data movers are pre-assigned for servicing video streams for each movie ranking. In an analogous art, Mizutani teaches in figure 7 storing movies, represented by C0 and C1, to pre-assigned data storing means or "data movers". Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Armstrong with the teachings of Mizutani in order to pre-assign data movers to service video streams for the benefit of making more resources available for more popular content.

Considering Claim 25, the claimed elements of freeing locked cache memory by transferring the servicing of a least popular movie in the cache from the cache to the disk storage so long as no more than a certain number of video streams are being concurrently serviced from the least popular movie in the cache, corresponds with subject matter mentioned above in the rejection of claim 8, and is likewise treated.

Note to Applicant

6. Art Units 2611, 2614 and 2617 have changed to 2623. Please make sure all future correspondence indicate the new designation 2623.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris Parry whose telephone number is (571) 272-8328. The examiner can normally be reached on Monday through Friday, 8:30 AM EST to 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Grant can be reached on (571) 272-7294. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiners Initials: CLP
April 27, 2006

CHRISTOPHER GRANT
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